

### REMARKS

Applicants respectfully acknowledge receipt of the Office Action mailed September 11, 2002. In that Office Action, the Examiner rejected the pending claims under §112 first and second paragraphs. In response, Applicants have amended the claims and respectfully traverse the Examiner's rejections and request reconsideration.

#### § 112 Rejections

The Examiner rejected claims 39-51, 61-63 and 73-81 under § 112 first paragraph, asserting that the specification does not enable the process as claimed. Claim 39 has been amended to recite that the claimed process forms "aluminum oxide based ceramics." It should be understood that the recitation that the ceramics be "aluminum oxide based" does not preclude the presence of additional materials, including but not limited to dopants, in the ceramic materials. Applicants respectfully submit that this amendment cures the basis for rejection under § 112 first paragraph.

The Examiner also rejected claims 39-51, 61-63 and 73-81 under § 112 second paragraph, on the basis of various inconsistencies in the claim language. Claim 39 has been amended to recite the production of a "ceramic body." This cures the grounds for the rejection of claim 39, and also provides the antecedent required for claims 41 and 59. Several claims have been amended to replace the hyphenated "nano-particles" with "nanoparticles."

Applicants respectfully submit that the grounds for the § 112 rejections are cured and that the claims are therefore in condition for allowance. If the Examiner feels that the grounds for rejection are not cured, or if he is aware of any additional bases for a rejection under § 112, he is respectfully requested to telephone the undersigned.

#### Clarification of Claim 39

Claim 39 has also been amended to clarify what occurs during the evaporation step. Applicants assert that this amendment is for clarification only and is not for purposes of patentability or overcoming prior art. Applicants further submits that the amendment does not alter scope of this claim.

#### Unelected Species

Lastly, Applicants again request consideration of the claims of Group IV. In making the previous restriction requirement, the Examiner apparently overlooked the generic nature of claim 39. Claim 39 is an independent claim, which does not specify whether a fiber is dip-coated or not,

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and which is therefore generic to both of the species of Groups III and IV identified by the Examiner. Dependent claims 64-72 are directed to a subset of the method of claim 39, in which the substrate includes a fiber. Claim 64 has been amended to clarify this fact.

While the Examiner indicated that the claims are directed to two different species, the Examiner never argued that the two species require separate searches. Absent the need for separate searches, there is no logical reason to separate examination of the claims.

For all of these reasons, Applicants respectfully request that the Examiner consider claims 64-72, and further, in view of the allowability of amended generic claim 39, Applicants request allowance of the claims of Group IV.

Conclusion

Applicants believe that they have fully responded to the Office Action. If the Examiner has any questions or comments, or otherwise feels it would be advantageous, he is encouraged to telephone the undersigned at (713) 238-8043.

Respectfully submitted,



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**Marked-Up Version Of Claims Showing Changes Made**

39. (Amended) A method of controlling the porosity and pore size distribution of aluminum oxide based ceramic bodies comprising

reacting boehmite with a carboxylic acid to produce carboxylate-alumoxane nanoparticles,

drying the carboxylate-alumoxane nano-particles,

re-dissolving the carboxylate-alumoxane ~~nano-particles~~ nanoparticles in a solvent,

evaporating the solvent so as to deposit ~~drying the nano-particles~~ nanoparticles on a substrate,

firing the ~~dried nano-particles~~ deposited nanoparticles at a temperature greater than 300 °C so as to form an aluminum oxide based ceramic body.

52. (Amended) The method of claim 39, further comprising introducing the dissolved carboxylate-alumoxane ~~nano-particles~~ nanoparticles to a ceramic support.

53. (Amended) The method of claim 52 wherein ~~drying~~ deposition of the nanoparticles ~~nano-particles~~ takes place on the support.

61. (Amended) The method of claim 39 further comprising infiltrating the dissolved carboxylate-alumoxane nanoparticles ~~nano-particles~~ to a ceramic support

64. (Amended) The method of claim 39 further comprising dip-coating a fiber in the ~~mixture~~ solution of re-dissolved carboxylate-alumoxane nano-particles and solvent, wherein the fiber is the substrate on which the nanoparticles are deposited in the evaporating step.

73. (Amended) The method of claim 39 wherein the dried nanoparticles ~~nano-particles~~ are fired slowly at a temperature sufficient to burn off organic constituents.

74. (Amended) The method of claim 39 wherein the dried nanoparticles ~~nano-particles~~ are fired at a temperature between 25 °C and 225 °C.

75. (Amended) The method of claim 74 further comprising holding the nanoparticles ~~nano-~~ particles at a temperature of 225 °C for 30 minutes.
76. (Amended) The method of claim 74 wherein the nanoparticles ~~nano-~~ particles are fired at a temperature that is ramped from 25 °C to 225 °C at a rate of 1 °C per minute.
77. (Amended) The method of claim 76 further comprising holding the nanoparticles ~~nano-~~ particles at a temperature of 225 °C for 30 minutes.
78. (Amended) The method of claim 39 further comprising holding the nanoparticles ~~nano-~~ particles at a temperature of 300 °C for 80 minutes.
79. (Amended) The method of claim 39 further comprising firing the nanoparticles ~~nano-~~ particles by ramping the temperature to 1100 °C at a rate of 2 °C per minute.
80. (Amended) The method of claim 79 further comprising holding the nanoparticles ~~nano-~~ particles at a temperature of 1100 °C for 400 minutes.
81. (Amended) The method of claim ~~39~~ 79 further comprising cooling the nanoparticles ~~nano-~~ particles slowly to room temperature.